

APPLICATION SERIAL NO. 10/611,447

PATENT

REMARKS***Mandatory Election in Response to Restriction Requirement***

In response to the restriction requirement dated March 28, 2005, applicants hereby elect Species I, claims 1-31 and 89-92, **with traverse**. The examiner is requested to proceed with the examination of claims 41-55 (Species II) and 56-63 (Species IV) along with elected claims 1-31 and 89-92 (Species I) and new claims 95-99 for reasons explained below. Claims 41-55 (Species II), claims 56-63 (Species IV) and claims 64-88 (Species V) are directed to a non-elected species, but have not yet been withdrawn in this amendment in view of applicants' traversal of the restriction requirement. Claims 37-38 and 93-94 (Species III) have been withdrawn since they are directed to a non-elected species and the restriction requirement as to them has not been traversed.

Explanation of the Amendment

The specification has been amended to correct minor typographical errors. The changes are not substantive, and no new matter has been added. Entry of the Amendments to the Specification respectfully is requested.

Claim 1 has been amended by deleting the term "the switch plane," which lacks antecedent basis. Dependent claims 83-84 have been amended by changing the dependency from claim 64 to claim 65 to correct a lack of antecedent basis problem for the term "switch axis." Claims 91 and 92 have been amended to correct a typographical error by which the switch claim they dependent from was referred to as a method claim. Claim 92 has further been amended by deleting "an" and substituting —a— to correct a typographical error. These amendments do not narrow the scope of the claims, and do not add new matter to the application. Entry of the Amendments to the Claims respectfully is requested.

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Claims 37-38 and 93-94 (Species III) have been canceled without prejudice to their being reintroduced in a divisional application, since they are directed to a non-elected species and the restriction requirement as to them has not been traversed.

New claims 95-99 have been added. Claim 95 is believed to be within Species I as defined by the examiner, claims 96-97 are believed to be within Species II as defined by the examiner, and claims 98-99 are believed to be within Species IV as defined by the examiner. The examiner is requested to consider and examine these new claims.

Applicants Traverse the Restriction Requirement

Applicants traverse the restriction requirement. Pursuant to 37 CFR 1.143, if the applicant disagrees with the requirement for restriction, he may request reconsideration and withdrawal or modification of the requirement, giving the reasons therefor. In requesting reconsideration the applicant must indicate a provisional election of one invention for prosecution, which invention shall be the one elected in the event the requirement becomes final. The requirement for restriction will be reconsidered on such a request. If the requirement is repeated and made final, the examiner will at the same time act on the claims to the invention elected.

The reasons why applicants traverse the restriction requirement are explained below. In view of these reasons, applicants request the examiner to take one of the following two courses of action.

- The examiner should proceed with the examination of claims 41-55 and new claims 96-97 (Species II) and claims 56-63 and new claims 98-99 (Species IV) along with elected claims 1-31 and 89-92 and new claim 95 (Species I). Applicants also traverse the restriction requirement as to Species V, but cannot determine whether claims 64-88 should be examined separately or along with claims 41-55 (Species II), claims 56-63 (Species IV), and elected claims 1-31 and 89-92 (Species I) without clarification from the examiner (as further explained below). Applicants have not traversed the restriction requirement as to Species III.

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- Alternatively, the examiner should withdraw the present restriction requirement in its entirety. The present requirement is inaccurate and incomplete, because restriction cannot reasonably be based on the figures of this application without substantial elaboration by the examiner, as explained below. A new restriction requirement, if appropriate, should be issued.

In the following remarks, applicants first review the restriction requirement and explain their view of why the restriction requirement is inaccurate and incomplete. Next, applicants will explain why examination should proceed with claims 41-55 and 96-97 (Species II) and 56-63 and 98-99 (Species IV) along with elected claims 1-31 and 89-92 and new claim 95 (Species I). Finally, applicants provide some explanation of other factors the examiner may wish to consider should the examiner decide to withdraw the present restriction requirement and issue a new one.

Reasons Why the Restriction Requirement Is Inaccurate and Incomplete

The examiner has defined five species by both figure number and claim number. Reconsideration and withdrawal or modification of the restriction requirement is requested because the species definition is inaccurate and incomplete for at least the following three reasons.

- First, some figures and correspondence of claims thereto are not addressed.
- Second, the correspondence between the identified claim groups and figures is largely incorrect.
- Third, the presence of linking claims was not addressed.

Applicants now elaborate on each of the three reasons for why the restriction requirement is inaccurate and incomplete. First, the restriction requirement is incomplete because not all figures which support claims are addressed. The restriction requirement fails to deal with figures 3, 5, 6A, 6B, 6C, 7 and 8. While this omission

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might not be serious were the correspondence accurate between the figures that are addressed and the claims, but it is not.

Second, the correspondence as identified by the examiner between the figures that are considered and the claims generally is not correct, or are fatally ambiguously. Applicants will give just a few examples to illustrate the point. The examiner classifies Fig. 2 and independent claims 1 and 89 as of the same species (Species I), but (a) the limitations of independent claims 1 and 89 are also shown in, for example, Figs. 3, 5, 6A, 6B, 6C, 7, 8, 10 (Species IV) and 11 (Species V); and (b) the limitation in, for example, claim 5 that the anode layer has no edges forming the side wall of the groove is not shown in Fig. 2. The examiner classifies Fig. 4 and independent claim 41 as of the same species (Species II), but (a) the limitations of independent claim 41 are also shown in, for example, Figs. 5, 7, 8 and 11 (Species V); and (b) the limitation in, for example, claim 46 of a buffer layer is not shown in Fig. 4. The examiner classifies Fig. 10 and independent claim 56 as of the same species (Species IV), but (a) the limitations of independent claim 56 may also be shown in, for example, Figs. 2 (Species I), 7, 8 and 11 (Species V); and (b) the limitation in, for example, claim 58 of an anode layer through which the groove extends is not shown in Fig. 10. The examiner classifies Fig. 11 and independent claim 64 as of the same species (Species V), but (a) the limitations of independent claim 64 are also shown in, for example, Fig. 3; and (b) the limitation in, for example, claim 73 of a light source mounted to a plate is not shown in Fig. 11. The foregoing are only examples to indicate the types of inaccuracies in the restriction requirement, and are not exhaustive of all such errors.

Third, the examiner failure to identify the generic claims and species dependent therefrom. The various species which appear in the dependent claims and which are dependent from generic claims are not identified by the examiner. Claim 1 (Species I) is generic to claims 2-31 and as mentioned above, contains limitations shown in many of the figures, while claim 2 is limited to a diode as shown in, for example, Fig. 10 (Species IV); claim 4 is limited to a thyristor as shown in, for example, Fig. 2 (Species I); claim 12 is limited to a high n-doped region and a low n-doped region between the high

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n-doped region and the first p-doped region as shown in, for example, Fig. 8 (unidentified species); and so forth.

These three reasons are relevant because of the essential nature of restriction practice. Applicants understand the relevant aspects of restriction practice to be addressed in MPEP § 808.01(a), which states that "Where there is no disclosure of relationship between species ..., they are independent inventions and election of one invention following a requirement for restriction is mandatory even though applicant disagrees with the examiner. There must be a patentable difference between the species as claimed." Where as here the species are ambiguously defined, applicants cannot make an effective election and the record becomes confused with inconsistencies that do not serve the public interest.

Why Examination Should Proceed with Species I, II and IV

While applicants do not necessarily disagree with the examiner that various independent or distinct species may exist within the group of claims 1-31, 41-55, 56-63, and 89-92, applicants do not believe that the present restriction requirement accurately identifies such species. The examiner should in particular consider the generic nature of independent claims 1, 41, 56 and 89, and that these claims link various species set forth in the dependent claims. The examiner has not separately restricted these species, but has restricted independent claims that contain what might be considered to be various defining limitations of these species. Because the search of these unrestricted species within the elected group of claims would involve many of the same limitations in the nonelected group of claims, applicants do not believe that examination of claims 1-31, 41-55, 56-63, and 89-92 all together and along with new claims 95-99 would seriously burden the examiner, and respectfully urge the examiner to proceed with such an examination. The examiner's attention is directed to MPEP § 803, which provides that "If the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it includes claims to independent or distinct inventions."

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In connection with applicants proposal that examination proceed with claims 1-31, 41-55, 56-63, and 89-92, applicants suggest that the examiner may wish to consider redefining Species V. In the restriction requirement, the examiner defined Species V by Fig. 11, and identified claims 64-88 as the corresponding claims. However, this definition is ambiguous. Fig. 11 shows an embodiment of a thyristor having a p- drift layer 1104 and a main blocking junction 1103 formed between the p- drift layer 1104 and an n base layer 1102. A groove 1116 extends through the blocking junction 1103. However, claim 64 for example is not limited to a thyristor or to a main blocking junction, or to any particular dopant types for the respective layers that form a switch blocking junction. While claim 64 is limited to a groove having a light refracting side wall that extends through one of the layers into the other, this feature is not unique to Fig. 11 and is also shown in Fig. 3. Applicants cannot determine whether the independent and distinct invention of Species V as defined by the examiner is a switch that uses a p-type drift layer, or a switch in which a groove extends through one of the layers into the other, or some other combination of limitations. As is apparent, the restriction requirement as to Species V is ambiguous, and whether claims 64-88 should be examined separately or along with claims 1-31, 41-55, 56-63, and 89-92 must await clarification of the restriction from the examiner.

Further in conjunction with applicants proposal that examination proceed with claims 1-31, 41-55, 56-63, and 89-92, applicants have added new claims 95-99 containing limitations on whether or not the groove extends through one of the layers into the other. As these claims are dependent from independent claims outside of Species V, applicants believe that these claims may be examined along with their independent claims because the search and examination can be made without serious burden, *see* comments on MPEP § 803 above.

Other Factors Possibly Relevant to Reconsideration of Restriction

Should the examiner wish to modify the requirement rather than proceed with the examination as requested by applicants, applicants would suggest to the examiner that the figures are not an entirely appropriate way to frame the restriction requirement in

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this application. Except perhaps for the species of Fig. 9, identifying species by the figures of this application would necessarily be ambiguous because each figure provides support for multiple limitations and many limitations find support in multiple figures. Applicants believe that the restriction requirement should be defined in terms of groups of claims having certain combinations of limitations. While the figures may sometimes serve as a useful surrogate for identifying independent and distinct inventions as claimed, that is not generally the case in the present application. The issue discussed above with respect to Species V is a good case in point.

Conclusion

While applicants have complied with the requirement of a mandatory election by electing claims 1-31 and 89-92 for examination, applicants urge the examiner to modify the requirement or withdraw and reconsider the requirement. If a telephone conference would be helpful in resolving any issues concerning this communication, the examiner is invited to contact the undersigned at (952) 253-4135.

Respectfully submitted,
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